An Action Plan for Managing Information Technology

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Executive Summary

Economic realities and public expectations require the state to manage information technology (IT) better and to use it more cost-effectively. This plan puts forth an approach for managing IT in state government that is new in North Carolina, but is actively used in other states and the private sector. The overriding goal is to optimize the costs and benefits of IT by using technology as a tool to improve levels of constituent services, enable business and program efficiencies, enhance employee productivity, and offer savings in government operations.

Background

The debate over the usefulness and value of information technology to governmental functions is over. IT is essential to the successful performance of the state's business processes and program operations. IT can positively influence the growth of the state, prosperity of its constituents, health and safety of its citizens, cleanliness of its environment, vitality of its economy, profitability and viability of its industries, productivity of its employees, and conduct of its democratic processes.

Even in strong economies and favorable funding conditions, there is never enough money to meet all desired, even worthwhile, investments. In today's environment of recent budget crises and projected fiscal austerity in state government for the foreseeable future, continuing budget constraints will make spending discipline more prevalent and critical. It is imperative that the state makes the best selection, implementation, and use of its IT investments.

Through the provisions of ratified Senate Bill 991 and preceding legislation, the General Assembly has mandated that the state improve the planning and budgeting for and management of IT. More specifically, the state must be able to predict and justify future long-term funding needs and take bold and far-reaching measures for implementing the management of IT.

Approach for the Management of IT

This situation cannot be addressed with a business-as-usual attitude. It requires a courageous, but proven, approach for the management of IT that makes use of verified best practices, industry recognized methodologies, and well-established tools and disciplines. The approach is built upon two primary elements:

1. Enterprise management of common shared technical infrastructure and technical services.

2. A framework for the management of IT investments.

North Carolina should deliver more IT infrastructure functions at a statewide level, cutting across agency lines, while allowing agencies to focus on their specific, core IT business and program needs. And the state should adopt a comprehensive, "cradle to grave" practice for planning, buying, implementing, operating, and retiring/replacing IT assets.

Management and Funding Priorities for the Biennium

North Carolina is facing needs for both IT management action and IT funding that grow more critical over time. Investments in IT may become more expensive as needs arise. By managing the process, the state should be able to flatten the growth curve for IT expenses, preventing it from becoming unsustainable over time.

Management Priorities

The state is not yet in a position where it can generate defensible, long-range cost estimates for all of its IT needs, or a detailed schedule for meeting them. It is gaining that knowledge, but is not there yet. The first step is to obtain a complete, accurate, and up-to-date inventory of the state's applications, hardware, and software assets.

As part of the Year 2K effort, the state developed an inventory of its legacy applications. (These are defined as in place operational software for meeting specific department business/program needs.) That information became outdated over time; therefore, the state had no current information on its key systems. Responding to this problem, and with the concurrence of the General Assembly, the State CIO commissioned a complete analysis of the health of the state's major software applications. The legacy application study was completed in December 2004. Prior to its completion, most of the information the state had about the applications used by state agencies to deliver critical services was anecdotal—stories about agencies using applications so old that only two people could write the code to keep it running.

Now that the state has this inventory, the next actions are: 1) to develop a more permanent legacy management system for continuous updating by the departments, and 2) take advantage of a recently purchased portfolio management package to analyze the individual applications on a frequent (at least annual) recurring basis for normal maintenance, modernization, replacement, or retirement. The follow-on legacy study will provide firm cost estimates and priorities for upgrading or replacing the applications requiring attention in the immediate (next two years) future.

Until last year, there was no estimate of the number of servers, desktop and laptop computers, communications equipment, or the associated software used by executive branch agencies. The state obtained order-of-magnitude estimates only through laborious and time-consuming surveys. The next action is the implementation of an asset management system, including a repository for the

ongoing collection and reporting of detailed asset information, such as identification, age, location, cost, warranties, etc. When the state has good asset inventory information, it will be able to use the recently purchased portfolio management package to analyze this data for making replacement, consolidation, and other management decisions and determining associated costs.

Although there remains much work in achieving the management of IT in state government, progress is being made, and the completion of the initiatives outlined in this plan will give policy makers the information they need to make sound, rational decisions about meeting IT needs.

These initiatives also will generate savings that could pay for some, but certainly not all, of the state's IT needs. The Office of State Budget and Management, assisted by ITS and the State Controller, was directed by Senate Bill 991 to propose a plan for consolidating IT infrastructure, staffing, and expenditures in areas where a statewide approach would be more economical. The reallocation of staff is an important component for achieving cost savings and operational efficiencies in consolidations; therefore, this issue must be addressed in the plan. The State CIO's IT plan is being written in anticipation of that report, and it should set the stage for appropriate action resulting from findings of that study.

In addition, some of actions related to these initiatives are already generating savings. By purchasing desktop and laptop computers in bulk, we are enjoying the benefits of volume discounts. Enterprise licensing — the statewide negotiation of one license for all the agencies that use specific software — is saving agencies money.

Funding Priorities

The two funding priorities for the biennium are:

1. The implementation and continuation of the initiatives contained in this plan for the management of IT, particularly the sustaining of the IT Enterprise Fund - The more judicious selection, implementation, and operation of IT investments will save the state money over the long term. Even though IT investments may increase, they should generate offsetting savings and create value in business and program operations through efficiencies, productivities, and the enabling of innovations in program delivery. Moreover, the transition to a more statewide approach for the management of common shared technical infrastructure and technical services will involve some initial costs to effect, even though long-term savings will accrue. Experience from both public and private sectors indicates that IT budgets are best optimized through better planning and budgeting that eliminates duplicate, unnecessary, or under performing applications and consolidates infrastructure components. In many instances, the economics of asset consolidation and retirements are as

important to prudent IT fiscal management as the cost-effectiveness of investment implementations.

Although the management of IT will require initial up-front costs, long-term savings from increased efficiencies in IT operations and business and program processes will offset these investments. However, great vigilance on the part of the Office of State Budget and Management and the Office of State Controller will be required to ensure the appropriate savings accrue.

2. The replacement of the state's technically outdated and functionally deficient payroll and human resources systems – This very important effort is being conducted under the auspices of the Office of the State Controller's Statewide Business Infrastructure Program. It is proceeding well and must be sustained. Current work is focusing on the defining of requirements, and the new application should be implemented over the coming biennium.

Cost estimates for the above funding priorities will be provided in additional separate materials.

Major initiatives

The seven major initiatives summarized below are necessary to implement the new approach for managing technology. These initiatives logically follow from past studies and projects, and form the blueprint for more detailed plans to guide their implementations. Several plans have already been developed, and some projects are now underway. Each initiative is important; therefore, the numerical order is insignificant from either priority or sequencing perspectives.

First Initiative - Consolidate common shared technical infrastructure and technical services for greater savings and better operational performance.

Second Initiative – Perform strategic planning for identifying best IT investments.

Third Initiative – Manage projects for superior results.

Fourth Initiative – Provide measurable, performance-based delivery of services.

Fifth Initiative-Manage legacy applications (installed department business/program software) for reduced risks of failure and optimized life-cycle benefits and costs.

Sixth Initiative – Develop a proficient and appropriately staffed IT workforce.

Seventh Initiative – Sustain the IT Enterprise Fund.

Purpose

The state is in an ideal position to improve its planning and budgeting for and its management of IT. With the passage of SB 991 and preceding legislation, the governance underpinnings have been placed and performance expectations have been clearly defined. The state can now build upon these and other management foundations previously implemented to develop a responsive and results-oriented approach for managing IT in order to obtain superior benefits and value within cost constraints.

The initiatives presented in this plan will guide the state in meeting the intents of SB 991 and preceding legislation for the management of IT. These mandates require the state to:

- Practice astute capital planning and sound investment management by evaluating investments and selecting the best.

- Implement investments in the most cost-effective manner, within reasonable timeframes, and with successful outcomes.

- Operate and maintain computing and communications infrastructure and mission-critical applications in a reliable, economical, and secure manner.

- Review applications and infrastructure assets periodically to evaluate their cost-effectiveness and risk-acceptability and determine optimal times and ways for renovating, retiring, or replacing them.

The primary purpose of this document is to explain the 'what' and 'why' underlying the approach for managing technology. The 'how' involves more detailed strategies, plans, and actions for employing the concepts and accomplishing the initiatives prescribed herein. These will be developed as future efforts as the individual initiatives are addressed.

The approach for the management of IT is not 'plowing new ground' or 'sailing in uncharted waters'. Rather, the underlying concepts, disciplines, and methodologies have been used successfully in the private sector for some time, and other governments and states are now espousing and implementing them. Moreover, the approach responds to economic realities while realizing the importance of IT to the state.

Concepts Underlying the Approach for Managing Information Technology

The approach for managing IT is built upon two primary elements:

1. Enterprise management of common shared technical infrastructure and technical services.

2. A framework for the management of IT investments.

These are business sense foundations of IT management that being used by leading successful organizations in both the public and private sectors. Most industry and commercial companies and many governments are facing the same or similar economic-driven and customer- fussy environments and IT management challenges as the state. They are essential, time-tested, and proven components of good IT management. Each is described in detail below.

Enterprise Management of Common Shared Technical Infrastructure and Technical Services

Conceptual Overview of Enterprise Management

The primary intent is to employ a more enterprise, or statewide, approach for the management of common shared technical infrastructure and technical services. This will save money and provide for more public-oriented services. Savings are achieved through efficiencies from economies of scale, standardization of hardware/software to group purchases for volume discounts and to simplify maintenance and operations, and cost avoidance by eliminating redundancies in investments. It also will assist the departments to facilitate the sharing of information to authorized users; integrate business processes; and achieve higher levels of integrity of data, reliability of operations, security of assets, and disaster recovery and business continuity.

Common shared technical assets and services include hardware, software, and communications equipment that serve the same or similar technical purposes. These assets have universal applicability and ubiquitous visibility by being used by many different types of business and program processes or applications; and are commodities in that they are available from multiple vendors, have comparable functions and features, serve a broad diversity of markets in both the public and private sectors, and offer competitive prices. They provide the foundation of IT capabilities that meet a wide variety of needs common to multiple applications (which in turn satisfy precise and unique business and program requirements). These shared technical assets and services include desktop and mobile computing devices, printers, servers, mainframes, and network components, such as firewalls and routers, as well as e-mail, common

payment services, identity and access management services, directory services, etc.

Statewide management optimizes infrastructure and networks across the enterprise, and accrued savings can be used for:

- Updating and refreshing the technical infrastructure and technical services to ensure satisfactory performance, appropriate security, and adequate capacity at the most economical costs.

- Allocating additional monies to departments/programs for enhancing, modernizing, replacing, or adding new applications to offer better services for constituents that are less costly and provide more value to the state.

Background of the Management of Technical Infrastructure and Services

Over the last half century, IT has evolved from basic computing to mainframes to stand-alone desktops to networked devices to Internet communications to Web-based architectures. The addition of IT capabilities to government has been gradual, with disjointed planning and incoherence in implementation reinforced through funding allocations and solution developments designed solely for meeting specific departments and programs. Purchases for products and services were unique and individual, with little or no thought given to the need for the distribution of information or the combining of the same or like investments for meeting common technical requirements in an economical manner through the sharing of staff and hardware/software resources.

Moreover, as technology moved from centralized computing of the mainframe to the distributed architecture of geographically dispersed servers, desktops, printers, and mobile devices tied together through ubiquitous networks, the hardware/software and communications components became more like commodities. In addition, the Internet and new Web-based architectures made possible technical services that have become commodity-like. These include e-mail, directory services, identity and asset management services, common payment services, etc. Therefore, by standardizing on common technical features to meet similar business needs, computing and network infrastructures and like technical services could be consolidated into common shared technical environments.

Benefits and Advantages of Enterprise Management of Technical Infrastructure and Services

The standardization and consolidation of today's computing and communications technical infrastructure and technical services presents significant operational performance improvement and cost saving opportunities.

- Through standard configurations, more favorable prices can be obtained by leveraging the purchasing power for volume purchases made possible by aggregating demands. In addition, standardization simplifies operations, maintenance, and record keeping; thereby, providing cost savings through improved efficiencies and better productivity.

- By consolidating smaller units of computing, storage, or service components into larger units shared by multiple applications, the decreasing price elasticity (reduction in price as size increases) of these components minimizes purchase costs.

- Economies of scale offer tremendous efficiencies and associated cost avoidance and savings. This can be realized by minimizing duplicate investments and by spreading the largest number of activities (transactions, data entities, communications traffic, etc.) over the largely fixed expenses for purchasing and operating common assets and services to minimize unit costs.

- The elimination of unnecessary duplications in technical environments through consolidations presents opportunities for cost avoidance.

- The enhanced ability to share data among programs, departments, and governments offers more convenience to the public (such as one-stop shops), increases the productivity of staff (by consolidating data to solve problems quicker and make more informed decisions), and provides better services.

- Requirements for security and disaster recovery/business continuity are facilitated through the use of common processes and shared hardware/software.

- Technology assets and services and skilled staff will be available to small or less endowed departments or programs that otherwise would not be able to afford them. Services will become so economical that all applications can participate.

The advantages of the consolidation of common shared technical infrastructure and technical services are summarized as follows:

- Reliable, robust, scalable, and secure technical infrastructures and services form the backbone for computing and communications; therefore, they are essential for successful IT investments in other areas, particularly applications. Consolidation offers the best assurance that business and program performance objectives can be met, including enhancing service reliability and availability, minimizing risks of failure, decreasing security vulnerabilities, and simplifying disaster recovery and business continuity processes.

- Savings and costs avoidance made possible by consolidating technical infrastructures and services provide a source of funds for other technology investments that would otherwise not be available (such as applications that more directly impact program efficiencies, business productivities, and public services). Research shows that the most successful companies in the private sector and best run governments make maximum use of common shared infrastructure and services, and they control tightly the funding for and management of them. As a result, they ensure their technical infrastructure and services are adequate and secure, but no money is wasted in duplications or spending inefficiencies. The savings obtained by deploying consolidated and cost-effective infrastructure and services is invested in applications that offer the greatest business benefits (for private industry) and public value (for governments).

- Common technical infrastructure and services facilitate the: a) enhancement of data management processes, b) improvement of information distribution to authorized users, and c) integration of processes for greater efficiency of business activities and program processes and effectiveness of public service.

Consolidation of Common Shared Technical Infrastructure and Technical Services

Consolidation is not the same as centralization. Centralization implies geographical location, ownership, and control. Consolidation connotes a form of management, with a specific emphasis, methodology, and focus. For common shared infrastructure and services, the emphasis of consolidation is maximizing cost-effectiveness and achieving cost savings and cost avoidance. The methodology is the minimizing of unnecessary duplication of assets, staff, and expenditures; leveraging of purchasing power, assets, and staff; taking advantage of economies of scale in cost structures; and combining of monies, assets, and staff to obtain sufficient technical capabilities at the least costs. The focus of consolidation is the separation between the collective needs of the state as a whole and the individual and specific needs of departments and programs.

For the state, consolidation is the cost-effective use of IT to deliver the best possible services to the public at costs taxpayers are willing to bear. In this

regard, for the management of IT, the state will be responsible for common shared technical infrastructure and technical services, and the departments will be responsible for applications. The state is responsible for reliable, efficient services to departments, and departments are responsible for cost-effective and quality services to citizens.

The following conditions must be prevalent for the consolidation of common shared technical infrastructure and technical services to be successful:

- Savings and cost avoidance must be achieved through wise and decisive management of the infrastructure and services.

- Increased IT funding availabilities from savings and cost avoidance must be reapplied to keeping the infrastructure and services robust, reliable, and secure – and/or given to the agencies to invest in applications that contribute to tangible, observable improvements in government performance and public good will.

- The infrastructure and services must be managed so that service to departments/programs is satisfactory, capacity is adequate and scalable for handling new users and increased volumes, flexibility is offered for accommodating changes in requirements, extensibility is considered to accept new technologies, appropriate security is ensured, disaster recovery is enabled, and trust is earned.

- Departments/programs must combine application implementations and enhancements with process reengineering, cultural change, and organizational restructuring efforts to generate savings from operating productivities and procedure efficiencies and enhance the delivery of goods and services to the public.

The consolidation of the state's common shared technical infrastructure and technical services is a shift of management attention for this infrastructure and services from a department view to a more statewide perspective, with the corresponding emphasis of departmental management to the development, implementation, and operation of individual applications. The state will take more responsibility for the management of the technical infrastructure and technical services, while departments will be more responsible for application development and associated business rules, processing efficiencies, and effectiveness of services to the public. Technical infrastructure and technical services will be managed as a secure, dependable, and trustworthy utility, with performance-satisfaction and cost-sensitivity as primary success criteria. Applications will be managed by departments to provide a government that is more citizen-centric, cost-conscious, service-based, responsiveness-driven, and results-oriented.

North Carolina's Experience in Managing Technical Infrastructure

In the mainframe era, the state recognized that computers and telecommunications were utility functions that could be best provided from a common organization. ITS (formally called SIPS) was formed in the early 1980s to effect the consolidation of agency mainframes and networks. As a result, the sharing of the technical expertise of a single pool of personnel and the use of common facilities offered cost savings through the more efficient use of staff resources and economies of scale, while allowing modern technology to be available to all agencies.
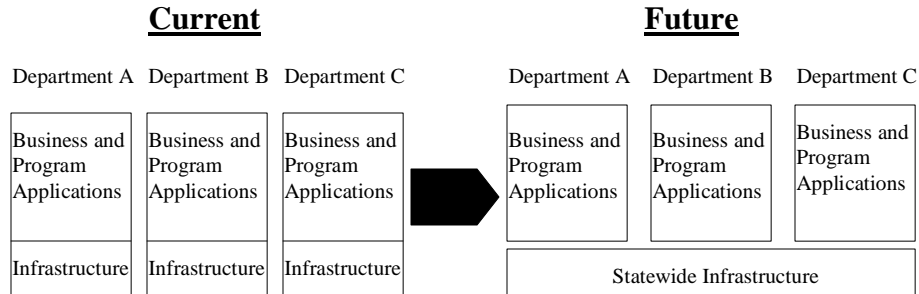
The utility model for managing statewide IT resources was not extended to the networked computing environment of the middle 1990s, featuring distributed assets connected by local networks. Departments purchased, implemented, and operated local computing hardware/software resources and telecommunications equipment, and they connected these devices and systems to the state's common wide area network (WAN) to communicate electronically among the devices and systems.

The state has attempted to cope with the evolving heterogeneous technical environment of geographically dispersed IT assets by developing policies and setting standards for coordinating efforts, providing quality control, and taking other steps for trying to make agency systems and statewide infrastructures work together. This approach has not worked as desired. As a result, the state is experiencing duplications of investments, increased operating costs, less reliability of processing, higher hardware/software purchase prices, excessive system implementation costs, increased security exposures, and more expensive disaster recovery and business continuity services.

Summary of the Enterprise Management of Common Shared Infrastructure and Services

The diagram below illustrates the proposed change in the management of IT infrastructure and services.

Proposed Change in Management
of IT Infrastructure

Current   **Future**

Department A	Department B	Department C		Department A	Department B	Department C
Business and Program Applications	Business and Program Applications	Business and Program Applications	→	Business and Program Applications	Business and Program Applications	Business and Program Applications
Infrastructure	Infrastructure	Infrastructure		Statewide Infrastructure		

In summary, the enterprise management of common shared technical infrastructure and technical services dictates that the departments will emphasize their responsibilities for IT investment management and applications management and decrease their focus on common infrastructure and services management. As such, departments will strive to deliver less costly but higher order citizen-service benefits through operational efficiencies and organizational effectiveness. By making internal business processes work well and streamlining organizational structures and making them more responsive, and focusing technology on department missions and program goals and objectives; departments can effect improvements and provide benefits for enhanced constituent services, economic development, and democratic interactions.

Since most successful application implementations combine the introduction of technology with business process reengineering, cultural change, and organizational restructuring efforts; departments must concentrate on making major business and organizational transformations. These may include radical changes to existing processes, roles, and reporting relationships, and business/program models. Finally, collaboration among departments, programs, governments, and private industry is a key success factor for government IT investments. The sharing of information and the leveraging of integrated processes and data are examples of the cooperation and collaboration needed to realize efficient and effective processes, improve management decision making and policy formulation, and offer full-service, one-stop shopping to the public.

The state as a whole will increase its management attention for the shared technical infrastructure and common technical services while re-emphasizing its role in IT investment management. It will continue to address applications management only from statewide architecture and project management

perspectives. The proper management of shared technical infrastructure and common technical services will assist departments in developing and implementing applications by reducing the need to develop and implement already available common resources and technical capabilities (hardware/software equipment or services), eliminate investment redundancies for commonly used components/services, minimize unnecessary duplicate work efforts, provide capabilities that may not normally be available if one funding source or project had to bear the full burden of purchase or implementation, and offer cost savings from economies of scale.
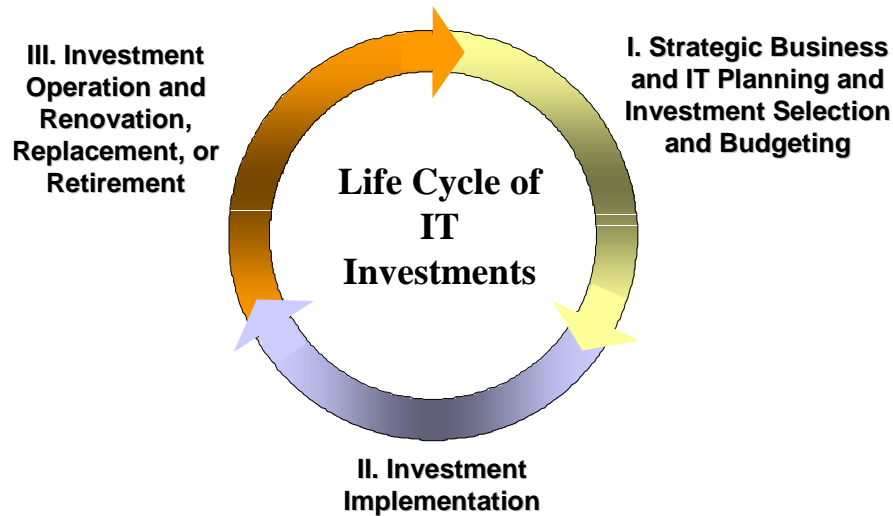
Framework for the Management of IT Investments

Proficient IT management means justifying technical services that sustain business processes and program operations, accounting for costs, and identifying and delivering benefits to the taxpayers and value to the state. That requires thorough planning, competent risk management, strict accountability for meeting business/program goals and objectives and asset performance expectations, and cost-effective life-cycle management.

SB 991 and other legislative mandates cover the wide spectrum of IT management, with the multitude of details that must be addressed and performed proficiently. In order to provide some coherence and order to the overall subject, a high level structure has been developed for the management of IT in the environment and situation of our State government. This is called the North Carolina IT Investment Management Framework, and it is a guide for continuing the journey to better IT management based on past progress and the directives of the governing legislation.

The framework is a key component of the new approach for managing technology so that technology is acquired, implemented, and employed more efficiently and cost-effectively. It will help the state keep track of technology assets; plan goals for using technology to meet business/program requirements; determine when and how best to acquire and implement new technology; develop approaches and performance measures for maintaining and operating in-place technology; and deciding when to discard, re-architect, or replace unnecessary, under performing, or risk-susceptible technology. The structure of the Framework is show in the diagram below.

Framework for IT Investment Management

III. Investment Operation and Renovation, Replacement, or Retirement

Life Cycle of IT Investments

I. Strategic Business and IT Planning and Investment Selection and Budgeting

II. Investment Implementation

The initiatives enumerated in this plan are focused on making use of proven and generally recognized best practices for the management of IT within the structure of the framework. Therefore, the initiatives form a coherent and synergistic whole that tie together for meeting the overall objective of the better management of and increased accountability for IT investments. Key IT investment decisions include what investments to make at what levels and when; how to implement them for achieving the desired results and benefits within approved costs and schedules; how to operate them in order to satisfy service level objectives for sustaining business processes; how to maintain them so that the trade-off between cost and performance is optimized; and when and how to modernize, retire, or replace them as they reach the end of their effective or economical lives.

The three phases of the framework are highlighted as follows:

I. Strategic Business and IT Planning and Investment Selection and Budgeting:

New investments in IT assets must be justified on the need to fill gaps in the ability of the State to meet strategic governmental initiatives, agency missions, or business goals and objectives. Department missions, duties, and responsibilities must be linked with the screening, selection, implementation, operation, and renovation or retirement of IT capital assets. Business strategies and IT plans must coalesce to make effective use of modern technologies to provide innovative and more cost-effective services that are justified by public need or constituent value.

IT goals, projects, and operations must be aligned with state political priorities, department initiatives, and business and program strategies and objectives. Business and program strategies reflect the fact that department managers know best their constituent's needs and how to meet them. IT plans specify what technology can do, how it can be applied to meet business and program goals and objectives, and how its capabilities can be used most effectively and economically.

Optimum department and statewide IT portfolios of new investments, in process projects, and operational assets should be created by employing planning and budgeting concepts and portfolio management practices and disciplines. IT investments should offer the least life-cycle costs of alternative approaches; fall within budget, schedule, and staffing constraints; be risk-acceptable; and provide desired and measurable financial returns or societal benefits. Evaluation criteria may include: support for governmental priorities and initiatives; regulatory mandates; best trade-offs among cost savings/revenue enhancements, purchase and implementation costs, and risks of failure; impact on program performance and results; and sustainability of core business activities and essential program operations. Limited fiscal and staffing resources must be allocated in a manner that makes the best use of them among competing desires and needs.

II. Project Implementation:

Implementation projects must continuously demonstrate satisfactory progress toward meeting approved budgets and schedules and achieving business goals and objectives. To have the best chance for success, projects should be well researched, thoroughly planned, and competently executed. Projects must be well managed by employing risk-based and performance-driven review and evaluation criteria; industry recognized system development methodologies; acceptable project management practices; prevailing design, construction, and testing standards; and lessons learned from previous endeavors.

Key success factors for state government include: develop and follow sufficiently detailed work and staffing plans and schedules; exercise effective leadership; provide sufficient staffing in skills and numbers; select qualified vendors and manage them well; use correct architectures and appropriate technologies; receive adequate funding; approve reasonable and achievable schedules; and frequently monitor status, report progress, and take timely and effectively action.

III. Investment Operation and Renovation, Replacement, or Retirement:

In-place assets must be operated proficiently so that they meet performance requirements for availability, reliability, security, and integrity of data. Normal maintenance and necessary enhancements must be planned and conducted to optimize costs and benefits over their useful lives. Industry-recognized frameworks and practices for IT service delivery management must be implemented.

Operational assets must be reviewed continuously, and as appropriate, they must be evaluated on how close actual annual operating and maintenance costs are to the life-cycle budgets, whether the level or quality of performance/capability meets business goals, whether they continue to satisfy agency and user requirements, whether they present unacceptable security vulnerabilities, and whether they are at-risk for failure. Replacements, retirements, and renovations must be planned and performed based on critical analyses of technical and business status, approach for remediation, and timeframe for action.

Major Initiatives

The seven major initiatives summarized below are necessary to implement the new approach for managing technology. Each initiative is important; therefore, the numerical order is insignificant from either priority or sequencing perspectives.

First Initiative - Consolidate Common Shared Technical Infrastructure and Technical Services for Greater Savings and Better Operational Performance

The state has recently completed a high level study of present asset management policies and processes from budgeting to disposal. Both agency business and technical managers have been included in developing findings and creating recommendations. Major in process and anticipated actions include:

- Develop statewide configuration standards for common hardware, software, and networking assets; adopt best practices, standards, and tools for managing them; and expand current purchasing policies and practices for maximizing volume discounts, vendor services, and warranties.

- Eliminate duplications in common technical services.

- Implement a statewide repository for collecting and maintaining a complete, accurate, and up-to-date inventory of the hardware, software, and communications equipment comprising the state's common shared technical infrastructure.

- Perform a study addressing the consolidation of data centers (including the state's many separate server-based operations entities) and consider the statewide implementation and use of best practices, methodologies, and standards for managing them.

Second Initiative - Perform Strategic Planning for Identifying Best IT Investments

Business strategies and IT plans must be developed and work in tandem to make the best use of technology for efficiently delivering quality, responsive, and timely services to the state's citizens and businesses. Potential IT investments must be identified, evaluated, and selected using modern portfolio management theories and concepts and business case disciplines.

A recently purchased portfolio management tool will form the foundation for organizing, categorizing, and prioritizing candidate investment opportunities and

developing investment recommendations for the Governor and General Assembly. Pertinent review criteria include accomplishing legal mandates and governmental imperatives, fulfilling agency missions and program goals and objectives, and delivering the most useful purposes or best values considering costs, risks, and benefits. A formal statewide view of potential IT investments will continue to be conducted to weed out duplication, identify potential opportunities for building or using common business rules or sharable technical components, and finding ways to combine funds for best meeting similar business or program needs.

Third Initiative - Manage Projects for Superior Results

The state has a long and distinguished history of monitoring, accounting for, and reporting major information technology projects. However, recent problems with large-scale statewide rollout projects have revealed critical weaknesses in the ability of agencies to manage complex IT investments. All technology projects have inherent problems; however, the nature of large statewide multi-jurisdictional projects amplifies the risks.

SB 991 has clarified the role and increased the responsibilities of the State CIO for the satisfactory progress and success of state IT projects. While departments have ultimate accountability for project performance, the State CIO has additional powers and duties for project manager review and project approval and status monitoring. An enterprise project management office has been created and staffed with the primary objectives of monitoring performance of projects in scope, budget, schedule, and quality dimensions and providing departments with subject matter expertise, tools, and techniques for improving project management.

The State CIO's project approval and status reporting process will be strengthened, streamlined, and simplified through the implementation of a recently purchased portfolio management tool. It will build upon lessons learned from past paper-intensive processes and provide for the collection of common data; evaluation against specific, measurable, and agreed-upon criteria; and reporting geared to the early identification of problems and assistance for appropriate and timely decision making. As a result, the process will be: easier to follow; more consistent in evaluations of the readiness of projects to begin and progress against plans and budgets; and more valuable to individual project managers, department project offices, and the state Enterprise Project Management Office.

Fourth Initiative - Provide Measurable, Performance-Based Delivery of Services

A generalized framework is being adopted and implemented by Information Technology Services as its operations excellence program for IT service management. This initiative recognizes that the central service center must be the leader in efforts to better manage and deliver IT services. Performance measurement and reporting is a key component of this endeavor. The goal is excellent service through effective partnerships, clear commitments, and flawless execution. The intent is to deliver improved service performance with predictably consistent reliability and availability.

Fifth Initiative - Manage Legacy Applications (Installed Department Business/Program Software) for Reduced Risks of Failure and Optimized Life-Cycle Benefits and Costs

Legacy applications are currently installed and operating purchased or custom developed software for meeting department business and program requirements. While designed to satisfy specific department business and program needs, they run on common technical infrastructure components and make use of shared technical services. Like the 'Energizer Bunny' legacy applications may seem to run forever. In reality, each has an optimal business, economic, or technical life. Over time the cost-effective sustainability of legacy applications becomes questionable. They no longer support business goals and objectives; are inefficient and too costly to operate and maintain; fail to meet security, privacy, or confidentiality requirements; are redundant; or present too great a likelihood of failure.

The state has completed a comprehensive study of its approximately 900 legacy applications and is developing enterprise strategies for remediation, including funding and cost-effective approaches for retirement, renovation, and replacement. The study highlights two serious challenges. One, while the state's legacy application portfolio is generally in good shape now, approximately 90 legacy applications need immediate attention (i.e., within the next two years). Two, an additional approximately 160 applications will require action in the two–to four-year future, so serious operational risks and financially onerous consequences will result if appropriate attention and resources are not applied to this issue.

A follow-on study will address cost items (which was beyond the scope of the past effort) and further explore opportunities for employing enterprise approaches that take advantage of economies of scale to minimize remediation expenses on a statewide basis. In addition, the recently purchased portfolio management tool

will be used to analyze and assist in managing the state's applications inventory on a frequently recurring basis.

Sixth Initiative - Develop a Proficient and Appropriately Staffed IT Workforce

The world of technology is one of continuing, rapid, and unpredictable change and incessant challenges. The state must establish what competencies and skills the IT workforce will need to meet future challenges, and it must develop the hiring practices and training and education opportunities to obtain, retain, and maintain these capabilities.

The lack of adequate personnel resources is a continuing and growing problem, and it is beginning to place applications and operations at risk. Some departments are having difficulty transitioning from their legacy-oriented and mainframe-based technical infrastructure to today's distributed-asset, network-intensive, and Web-based technologies. The past state budget crises are exacerbating the problem, with the elimination of key positions and the reduction in funds for training. This challenge is compounded by the fact that many agency technical workers are reaching retirement age; therefore, succession planning and knowledge continuity for legacy applications are becoming increasingly important issues. Out of the state's 900 legacy applications, around 15% are experiencing issues with limited business and/or technical knowledge of staff.

The state must become competitive with private industry in salaries and benefits for its IT workforce. Recognizing that quality of personnel is more important than quantity of positions; the ability to obtain and retain skilled and responsible staffing is essential for cost-effective IT management and operations. Moreover, good talent will reduce the present excessive dependence on outside contractors; thereby, providing cost savings and offering better control over projects and operations.

Seventh Initiative – Sustain the IT Enterprise Fund

The Information Technology Enterprise Fund was established by SB 991 to meet statewide requirements for implementing major IT investments and supporting planning, security, project management, portal, and purchasing activities and initiatives having statewide scope and applicability. The maintenance of this fund at sufficient levels is essential for the management of IT and the appropriate and timely development and implementation of applications that meet broad-based business and program needs, which span program lines and cross organizational boundaries.

The sustaining of this fund is vital to the achievement of the intent and goals of SB 991. It has made possible many of the activities and accomplishments to date for the management of IT, including the legacy assessment study, the

staffing of project management assistants, and the statewide security assessment.

Appendices

Appendix A – Background Considerations and Challenges

In developing the initiatives for the management of technology, the following background considerations and challenges were considered. They reflect the relevant technical, business, governmental, and economic realities of the state.

Background Considerations

IT funding and policy decisions, like all others, are made against a backdrop of factors. Those considerations help explain how we got where we are and illuminate potential potholes in the road ahead. In North Carolina, those factors include:

The state has experienced a four-year period of serious budget shortfalls, and recovery is guarded and will be prolonged.

Only a handful of states have had to cut their budgets more than North Carolina in the recent recession. Although some relief is predicted, fiscal austerity in state government will persist for the foreseeable future. The hyper-competitive worldwide economy, globalization, and other economic factors are creating dramatic and long-term trade and industry changes for the state. The adjustment resulting from the state's transition from its traditional economic bases to new generators of growth will continue to impact the rate of improvement in the state's fiscal health.

Through this period of severe spending reductions, IT has experienced deep and continuing budget cuts. This has presented problems because of the insufficiency and aging of technical infrastructure (creating at-risk systems), the growth in the backlog of applications to improve services to citizens (especially self-service using the Internet), and the decreased reliability and dependability of operations (creating more down-time for public services). The increasing rate of retirements for state employees and the lack of adequate funding (or inability to obtain approval for redirected funding) to fill vacancies are exacerbating at-risk situations.

There is a growing realization that state's IT expenditures are large, and future funding needs are sizable.

The facts below indicate the order of magnitude of the backlog in investment needs:

- In its last fiscal year, the executive branch (exclusive of the University System) spent $415 million (from all sources) on IT.

- A recently completed study of the state's legacy applications reveals that 10% of the 900 applications must undergo major renovation or replacement in the next two years. Of these, almost one-half are considered mission critical and at risk. Equally disturbing, an additional 300 plus applications require action within the next four years. Of these, nearly 160 will need significant modernization or require replacement. Historically, the state adds or replaces over 100 applications a year. The cost implications of these findings will be addressed in a follow-on study.

  The state's core business management applications being addressed by the Office of the State Controller's Statewide Business Infrastructure Program (SBIP) are included in these statistics. The SBIP will have important impact on the departments and offer extensive benefits to the state in improved financial management; however, it will require significant new expenditures for its completion.

- A cursory survey of the numbers and types of desktop applications (such as word processing and spreadsheet software) shows that thousands of instances exist throughout state government. This presents two issues: One, a considerable financial liability is present for the need to upgrade these over time as vendor support is removed and new capabilities are required. Two, the opportunity exists for obtaining less costly enterprise licenses – not only for desktop systems and applications, but also for other commonly used software for mainframes and servers.

- The just-completed State CIO review of expansion budget requests discloses that departments requested through the Governor's budgeting process over $300 million new IT funds (from all sources) for the 2005-07 biennium. Most were considered worthwhile from the perspectives of meeting a business need and employing IT in an appropriate manner.

- A survey of the State's distributed computing and communications hardware (PCs, servers, printers, routers, etc.) completed in early 2004 - and recently reviewed – indicates there are 50,000 plus pieces of equipment (costing more than $185 million) in use. The alarming finding is many are aging and must be replaced – almost 50% contain components no longer supported by vendors. However, since these products are commodities, there is potential for large and continuing savings from standardizing configurations, aggregating orders, and obtaining deep volume discounts.

- A comprehensive assessment titled Agency Compliance with Enterprise Security Standards dated May 2004 indicates that about

$48 million of additional outlays is needed to bring the departments' security protections up to standards. Of that amount, over $38 million is required to update desktop computers for the remediation of security vulnerabilities created by older operating software.

Through Senate Bill 991 (SB 991) - ratified in July 2004 - and preceding legislation, the General Assembly has mandated that the state better plan and budget for and manage IT.

SB 991 addresses key areas of IT governance and management, including the: planning for and financing of IT resources, development of standards and assignment of accountability for IT projects, and implementation of procurement processes that result in cost savings for IT products and services. Preceding legislation covers the areas of security, asset management, and applications management. Implied goals of SB 991 and other governing IT related legislation are highlighted as follows:

- Plan better for IT expenditures and make the most cost-effective use of them by making good investment decisions.

- Determine long-range IT funding needs to: enable more stable operating budgets, level funding streams for new investments and renovations/upgrades to present assets, maximize long-term returns from investments, and avoid crisis funding situations.

- Improve the cost, schedule, and quality performance of implementation projects to minimize budget overruns, schedule slippages, and problems in achieving business benefits or program objectives.

- Increase the cost-effective purchasing of services and assets.

- Improve the availability, reliability, and performance of computer processing and network communications to provide the required integrity for business processes and program operations.

- Protect critical assets from cyber and other vulnerabilities, preserve the privacy of individuals, and ensure the confidentiality of data.

- Provide the ability to recover mission critical applications and essential computing and communications infrastructure, in the event of human-derived or natural disasters.

- Determine the right times and best approaches for renovating, retiring, or replacing applications and infrastructure assets to achieve acceptable risks while gaining the most benefits at least costs.

Challenges

The following challenges must be addressed appropriately and timely in order to achieve the better management of IT in state government.

Challenge 1 – The public deserves and expects government to make the best use of technology to offer information and services that are accessible, convenient, responsive, beneficial, cost-effective, and government is expected to be accountable for expenses and results of IT investments.

Technology is essential for the successful performance of the state's business processes and program operations; therefore, more advantages to the public and greater value to the state can be realized through the better management of it.

Properly funded and appropriately employed, technology can offer the following significant benefits to the state's citizens, businesses, and employees:

- Facilitate easier access to and more responsive interaction with state government entities.

- Increase productivity of program operations and improve efficiencies of business processes; thereby, providing more and better services at less costs.

- Improve the performance of and results from governmental programs, so that greater value accrues from them.

- Contribute to the democratic process, educational opportunities, public safety, health and welfare, protection of the environment, and economic development, thus improving the quality of life.

The private sector is becoming the norm and standard for services and support from government. Accessibility, quality, and price/costs are key evaluation determinants forming the perceptions of the state's citizens and businesses for government services. The judicious and astute use of technology is important to continuing the trust, respect, and satisfaction of the public for government and its institutions.

Challenge 2 – The efficiency of spending for IT personnel and hardware and software resources must be improved; thereby, enabling more of the state's IT dollars to be spent on technology that directly benefits the public.

Studies have shown that the best IT organizations in both public and private sectors receive greater results with less money. The benefits of IT are not dependent solely on the amount or size of investments, but also on how funds are spent and how well the investments are managed. Today's technology infrastructure offers the opportunities to take advantage of economies of scale for spreading fixed costs over more production units, synergy of resources by

combining like technical functions to meet common needs, and leveraging of purchasing power. By better managing common shared IT assets, scarce dollars can be redirected more effectively to applications that directly impact services to the public.

Challenge 3 – The vulnerabilities for and protections against security threats to the state's IT computer and communications infrastructure and associated repercussions for damage or loss of assets and compromise of privacy of individuals and confidentiality of data must be addressed more cost-effectively and with greater assurance of success.

Security controls and privacy protection must be risk-based, threat- and vulnerability-focused, and cost-effective. Protecting the state's computer and telecommunications infrastructure and its mission-critical applications has never been more important because of concerns about attacks from individuals and groups with malicious intent, including terrorism. Security concerns are well founded for a number of reasons, and attacks can originate from a variety of sources, including cyber-terrorism accomplished through readily available hacking tools and more sophisticated attack technology. In addition, security precautions are necessary to prevent data tampering, fraud, identity theft, and inappropriate disclosure of sensitive information.

Challenge 4 – Assets must be operated and maintained in a manner that provides the required levels of service, including reliability, availability, scalability, and security at the most economical costs.

Service levels should be appropriate to business needs and program obligations, so that quality and costs are matched to requirements. Modern and proven models, methods, and standards must be used to align IT services to business needs, provide the necessary level of quality of services, and reduce the costs of services.

Challenge 5 – The state must develop a better management strategy that is responsive to the evolution of technology from the mainframe-centric structure of the last quarter of the past century to the networked computing environment of PCs, servers, and other distributed and mobile assets of the late 1990s and current period.

The mainframe era featured a few high-powered and centrally located and managed computing and data storage facilities, with dedicated connections to rigid access devices. Today's networked computing environment consists of many geographically dispersed and locally managed computing and data storage devices interconnected with local and wide area networks and offering ubiquitous access from a multitude of computing and telecommunications devices. The new technology environment offers great benefits, however; it creates many additional management challenges, especially for cost-effective implementation and operation.

Challenge 6 – The state must restructure and enhance its processes for the planning and budgeting for IT so that investments are identified, evaluated, and selected in a manner that provides the greatest benefits within cost constraints and risk profiles, and enable the reliable prediction of long-range funding needs.

There is a legitimate need for a long-term, sizeable, consistent, reliable, and predictable funding stream for IT. The size, timing, urgency, and priority of funding requirements must be determined, and the state must be able to provide better responses to the funding questions of what for, when, how much, and why.

Challenge 7 – The cost-effectiveness of legacy applications must be enhanced by having a better understanding of their technical and business status; risks of failure; and time and manner for renewal, retirement, or replacement.

Legacy applications are a two-edged sword. While forming the backbone for sustaining the state's business and program activities, they represent large investments, considerable on-going costs for maintenance and operations, and potential failure due to outdated technology no longer supported by vendors or state staff, excessive security vulnerabilities caused by outmoded design, or inability to be modified/updated for meeting changing business needs or program requirements. The risks of failure, deficiencies in satisfying business requirements, and recurring maintenance costs must be evaluated when determining the time and manner of renovating, retiring, or replacing them in order to optimize their costs and benefits over their useful lives.

Challenge 8 – The performance of implementation projects for major state investments must be improved; thereby, ensuring costs and schedules match approved budgets and timetables, results tie to benefit expectations, and business and program objectives are accomplished.

Major statewide IT projects represent huge investments, offer many benefits, and are conducted under governing, technical, and business environments that present large risks. To have the best chance for success, the projects must be well researched, thoroughly planned, and properly executed. Departmental responsibilities and accountabilities for the management and performance of projects under their jurisdictions must be re-emphasized. Additionally, the present processes, disciplines, and tools must be expanded and enhanced to provide needed assistance to individual project managers, responsible departmental leaders, and State CIO monitors for ensuring that projects are positioned for success prior to beginning and are performed satisfactorily.

Challenge 9 – Disasters (from either human-originated or natural causes) can have adverse consequences for the conduct of business processes and program operations; therefore, the ability to recover data, applications, and other mission-critical IT assets quickly and to continue business until the situation can be restored to normalcy must be better planned and accomplished in a manner that is more cost sensitive.

As with other large governmental and private organizations, state agencies rely extensively on computerized systems, interconnected networks, and electronic data to support their missions, deliver vital services, and perform necessary functions. Accordingly, the importance of the planning for and effecting of disaster recovery and business continuity capabilities for foreseeable untoward events must be stressed, and the risks for not having adequate provisions must be thoroughly understood. Mission critical applications and their associated technical and business infrastructures merit particular attention. For example, in a recent study, 57 applications housed at ITS require recovery within one day or less.

Challenge 10 – The state must recruit and retain a proficient and appropriately staffed IT workforce**.**

The lack of adequate personnel resources (in both numbers and skills) is a continuing and growing problem, and it is one of the main reasons applications are becoming at risk of failure. Moreover, this is the source of problems many departments are having in transitioning from legacy-oriented and mainframe-based technical infrastructures to today's more modern architectures based on the Internet and network-intensive technologies. The issue manifests itself in several ways. First, the insufficiency in staff presents a barrier for enhancing and updating infrastructure and applications to meet increasing business needs. Second, knowledge and experience lost to retirements from an aging state IT and business unit population must be replaced. Third, extensive use is made of outside contractors to provide skills and numbers of staff – a state workforce presents a more economical source of staffing.

Appendix B - Inventory of Major In Process Projects

The table below highlights major active in process IT projects in state government as of the end of January 2005.

Department and Title	Budget and Key Statistics	Description
Administration E-Government (E-Procurement) Initiative – Community Colleges Interface	Budget: Covered in Business Model Phase II Schedule: 07/31/2005	The goal of this project is to improve procurement in the state by improving the efficiency and cost effectiveness of business processes, and improving prices for goods and services through aggregated volume discounts and process efficiencies for suppliers. This is a self-funded initiative.
Administration Motor Fleet Management System (MFMS) Initiative	Initial Budget: $1,000,000 Current Budget: $1,494,626 Initial Schedule: 01/14/2005 * Current Schedule: 03/28/2007	The goal of the Motor Fleet Management System (MFMS) initiative is to select and implement a replacement for the legacy Motor Fleet Management mainframe system with a newer technology. The objective of the solution selection phase is to create a request for proposal (RFP) to determine if there is an appropriate commercial off-the-shelf (COTS) solution. The project is approved through design phase activities only (*).
Community Colleges Information Systems for the Future Initiative (Administrative Information Systems) Project	Initial Budget: $44,452,018 Current Budget: $104,378,928 Initial Schedule: 06/30/2003 Current Schedule: 06/30/2007	The goal of the Community College Administration Information Systems project is to acquire and implement a modern, efficient, and integrated information system that will meet the administrative operations and management information needs of all fifty-nine (59) community college institutions.
Crime Control and Public Safety VIPER - Voice Interoperability Project for Emergency Responders Tactical Solution	Initial Budget: $3,225,900 Current Budget: $3,449,797 Initial Schedule: 11/05/2004 Current Schedule: 06/30/2005	The goal of the tactical solution implementation phase of the VIPER initiative is to make interoperable communications available to all emergency responders statewide. The objective of the VIPER Tactical solution component of the initiative is to provide a short-term solution to interoperable communications for public safety agencies in North Carolina. This tactical solution will serve as a vehicle to provide interoperable communications until a more permanent system can be put in place as part of the strategic planning portion of the initiative.

Department and Title	Budget and Key Statistics	Description
Environment and Natural Resources Water Quality Basinwide Information Management System (BIMS)	Initial Budget: $3,400,000 Current Budget: $7,054,168 Initial Schedule: 12/30/2002 Current Schedule: 06/30/2005	The goal of BIMS project is to consolidate critical agency information for the Water Quality Section (WQS). This integration of databases through the BIMS project will allow agency staff, other organizations, the public, and the regulated community better access to and analysis of water quality protection information.
Health and Human Services Butner Psychiatric Hospital IT / Telephony Implementation Initiative (BUTNER)	Initial Budget: $97,000 * Current Budget: Initial Schedule: 09/30/2004 * Current Schedule: 01/28/2005	The goal of the initial planning phase of the project is to develop an initial, high-level plan for implementation of all telecommunications and IT solutions to support the operations of the new Butner Psychiatric Hospital. The project is approved for planning phase activities only (*).
Health and Human Services Client Services Data Warehouse and Software Migration Project	Initial Budget: $590,091 Current Budget: Initial Schedule: 11/30/2005 Current Schedule:	The goal of this project is to migrate the warehouse to a stable, scalable and reliable hardware and software infrastructure. The CSDW was established in 1999 to respond to federal reporting requirement for the Temporary Aid for Needy Families (TANF).
Health and Human Services HIPAA - Security Project	Initial Budget: $1,016,604 Current II Budget: $510,560 Current III Budget: $410,280 Initial Schedule: 01/15/2005 # Current Schedule: 02/28/2005 @	The goal of this initiative is to ensure that DHHS successfully implements the HIPAA Security Compliance Program and that the agency is in compliance with all federal and state mandates. The DHHS Security Project will be designed to establish an on-going process for analyzing security risks, managing security risks, and periodically reviewing the agency security infrastructure to identify areas for improvement. Phase II (#) and Phase III (@) approval only.

Department and Title	Budget and Key Statistics	Description
Health and Human Services Health Information System (HIS) Project	Initial Budget: $299,803 * Current Budget: Initial Schedule: 06/15/2004 * Current Schedule: 10/31/2004 * Current Schedule: 12/06/2005 #	The goal of the study phase of the initiative is to develop a set of business functional requirements for a Health Information System that will meet the needs of the Division of Public Health (DPH), Division of Mental Health, Developmental Disabilities and Substance Abuse Services (DMH/DD/SAS) and the Office of Research, Demonstrations and Rural Health Development (ORDRHD). The final business functional requirements document will be used as a foundation for developing a Request for Proposal (RFP) for procurement of an implementation vendor for the Health Information System (HIS). The project is approved through study (*) and procurement (#) phases only.
Health and Human Services Immunization Registry Project	Initial Budget: $2,500,000 Revised Budget: $2,410,520 Initial Schedule: 03/06/2003 Current Schedule: 10/06/2005	The goal of this project is to replace the existing North Carolina Immunization Registry (NCIR) with a system that will provide timely access to complete, accurate and relevant immunization data. This system will assist in the evaluation of immunization status and identify children who are past due for immunizations, assist communities in assessing their immunization coverage, and fulfill federal and state immunization reporting needs. The project is approved through pilot phase only.
Health and Human Services North Carolina Information and Referral (NC I&R) Project	Initial Budget: $2,183,240 Revised Budget: Initial Schedule: 04/01/2005 Current Schedule:	The goal of this project is to implement an integrated cost-effective commercial-off-the-shelf (COTS) solution that, with minimal customization, will provide a scalable and flexible Information and Referral (I&R) data management system that incorporates both a central Web-accessible I&R data repository and individual I&R services. The project is approved through planning and procurement phases only.

Department and Title	Budget and Key Statistics	Description
Health and Human Services NC FAST, Release 1 Program Case Management	Initial Budget: $24,113,389 Release 1 Budget: $1,062,752 Revised Budget: $2,049,472 Project Schedule: 06/30/2008 Release 1 Schedule:06/24/2005 Current Schedule: Initial Budget: $819,325 Current Budget: $875,000 Initial Schedule: 06/30/2004 Current Schedule: 01/31/2005	The goal of this revised human services system is to implement, through iterative releases, a new business model for access and service delivery systems within the agency, to improve access to information and to improve the quality of services delivered to North Carolina families. The project is approved through phase 1 only to include case management study, OLV implementation, and SDI implementation.
Health and Human Services NC FAST, Release 1 Online Verification (OLV) Implementation Project	Initial Budget: $550,084 Current Budget: Initial Schedule: 09/08/2004 Current Schedule: TBD	The goal of this revised human services system is to implement, through iterative releases, a new business model for access and service delivery systems within the agency, to improve access to information, and to improve the quality of services delivered to North Carolina families.
Health and Human Services NC FAST, Release 1 Project Service Delivery Interface (SDI) Project	Initial Budget: $1,141,000 Current Budget: $1,174,253 Initial Schedule: 12/01/2004 Current Schedule: 06/24/2005	The goal of this revised human services system is to implement, through iterative releases, a new business model for access and service delivery systems within the agency, to improve access to information, and to improve the quality of services delivered to North Carolina families.
Health and Human Services NCMMIS+ Initiative	Initial Budget: $2,889,254 Current Budget: $1,732,184 * Approved Budget $7,654,632 Initial Schedule: 12/31/2004 * Current Schedule: 01/31/2005 *	The goal of the North Carolina Medicaid Management Information System (MMIS+) initiative is to comply with the Centers for Medicare and Medicaid Services (CMS) mandate that the NC MMIS legacy system be replaced through an open and competitive bid process. The project is approved for implementation initiation phase activities only (*).

Department and Title	Budget and Key Statistics	Description
Health and Human Services NC National Electronic Diseases Surveillance System (NC NEDSS) Project	Initial Budget: $410,000 * Current Budget: Initial Schedule: 11/30/2004 * Current Schedule: 02/07/2005 *	The goal of the requirements definition phase of the initiative is to develop the functional and business requirements that will meet the needs of the Division of Public Health (DPH) in order to design, construct, and implement NC NEDSS. The final business functional requirements document will be used as a foundation for developing a Request for Proposal (RFP) for procurement of an implementation vendor for the North Carolina National Electronic Disease Surveillance System (NC NEDSS). The project has been approved through the requirements definition phase only (*).
Health and Human Services Vital Records and Statistics Automation Project	Initial Budget: $55,000 * Current Budget: $282,388 * Initial Schedule: 07/30/2002 * Current Schedule: 03/31/2005 *	The goal of this project is to procure commercially available software (COTS) to replace some, or all, of its legacy systems with standardized, integrated software. The project has been approved through the planning phase only (*).
Office of Information Technology Services Vantive Replacement Project	Initial Budget: $1,673,700 Current Budget: Initial Schedule: 06/30/2005 Current Schedule: 06/24/2005	The goal of the project is to implement a commercial off the shelf (COTS) IT Service Management solution to replace the current Vantive system that will be unsupported by the vendor after March 15, 2005.
Public Instruction Comprehensive Exceptional Children Accountability System (CECAS)	Initial Budget: $4,814,015 Current Budget: $6,358,988 Initial Schedule: 03/08/2004 Current Schedule: 08/11/2005	The goal of this initiative is to establish a system that provides student accountability and continuous monitoring of all exceptional children at all local education agencies (LEAs), state operated programs (SOPs), charter schools, and federal schools within North Carolina.

Department and Title	Budget and Key Statistics	Description
Public Instruction North Carolina Window of Information on Student Education (NC WISE) Wave 1 Implementation	Initial Budget: $25,361,984 * Current Budget: $25,744,444 * Initial Schedule: 06/30/2005 * Current Schedule:	The goal of the deployment portion of the NC WISE SIMS Replacement Project is to deploy the remaining 109 Local Education Agencies (LEAs) and 100 Charter Schools during the 2004-2007 school years. The NC WISE solution provides a student information management system to the LEAs and statewide reporting. Statewide deployment, as a project, follows the NC WISE planning project conducted December 2003 through July 2004. The project is approved for wave 1 implementation only (*).
Revenue Motor Fuels Tracking System Planning Project	Initial Budget: $78,440 * Current Budget: Initial Schedule: 04/01/2004 * Current Schedule: 01/31/2005 *	The goal of the study phase of the initiative was to develop options for creating an automated system to provide electronic motor fuel tax filing capability. The project is approved for study phase activities only (*).
State Board of Election SEIMS Help America Vote Act (HAVA) Upgrade Project	Initial Budget: $5,000,000 Current Budget: Initial Schedule: 12/31/2005 Current Schedule:	The goal of the State Elections Information Management system (SEIMS) Help America Vote Act (HAVA) Upgrade project is to centralize (statewide) the current decentralized (county administered) SEIMS system in compliance with federal HAVA requirements while providing both hardware and software upgrades to the SEIMS system that was installed in 1998.
State Controller Statewide Business Infrastructure Program (SBIP) – Human Resources / Payroll Project	Initial Budget: $1,800,000 * Current Budget: $1,109,844 # Initial Schedule: 05/31/2005 * Current Schedule:	The goal of the project is to develop an enterprise-wide Human Resources / Payroll system that provides a foundation for management flexibility, increased efficiency, and the information needed to make timely and appropriate decisions. The project is approved through planning (*) and RFP phases (#) only.
State Treasurer Integrated Retirement Systems Project (IRSP)	Initial Budget: $27,515,719 Current Budget: $28,450,033 Initial Schedule: 09/30/2006 Current Schedule: 04/30/2007	The goal of this business process re-engineering initiative is to improve the level of service to retirees, employees, and employer units by improving the efficiency and effectiveness of the agency's business processes and to consolidate and integrate the legacy systems.

Department and Title	Budget and Key Statistics	Description
Transportation Automated Routing and Permitting System (ARPS) Project	Initial Budget: $1,100,000 Current Budget: $1,398,231 Initial Schedule: 12/15/2000 Current Schedule: 03/25/2005	The goal of the ARPS project is to provide a platform of services accessing highway engineering information. The purpose of this initiative is to facilitate automated, accurate, and efficient processing of applications for permits to transport oversize/overweight (OS/OW) vehicles on North Carolina highways.
Transportation Mobile Bridge Inspection Implementation Plan (MBIIP) Project	Initial Budget: $955,482 Current Budget: $923,261 Initial Schedule: 08/11/2004 Current Schedule: 03/31/2005	The goal of the project is to provide each inspector with a computing device and software to automate gathering of bridge inspection data.
Transportation Pavement Management System (PMS) Phase 1	Initial Budget: $1,288,283 * Current Budget: $1,184,588 * Initial Schedule: 12/31/2004 * Current Schedule:	The goal of the Phase 1 (planning and evaluation phase) of the PMS project are to evaluate a commercial off-the-shelf (COTS) enterprise pavement management system in order to identify gaps between system functionality and business processes, document interface and other requirements for NCDOT desired enhancements to fill any gaps, decide whether to implement the PMS software as delivered by the vendor, and plan for the next phase. The project is approved for planning phase activities only (*).

Appendix C – Inventory of Technology Assets

The table below contains order-or-magnitude approximations of the number of assets in the state's inventory. The legacy applications inventory was determined from a recently completed comprehensive study and assessment; therefore its accuracy reflects a higher level of confidence. The other inventories were self-reported by the departments through surveys and not verified by ITS.

Asset Description	Inventory Approximations
Legacy applications – in place and operating software for meeting department business and program requirements	900
Servers	2,000
Desktops	50,000
Desktop software – instances (copies) of products	400,000